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Yucca Mountain
Supplement to the
Draft EIS

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.....NRC Docket No. 72-23
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July 5, 2001

Dr. Jane Summerson, EIS Document Manager, M/S 010
U.S. Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
P.O. Box 30307
North Las Vegas, Nevada 89036-0307

1 Subject: **Temporary Storage then Reprocessing is the Solution to Nuclear Waste Underground Storage at Pigeon Spur Is a better alternative**

Dear Dr. Summerson:

Spent nuclear fuel needs to be stored where it is readily accessible to take to reprocessing for future use as MOX fuel. Pigeon Spur NRC Docket No. 72-23 on a main line railroad is a better alternative. Private Fuel Storage on the Goshute Indian Reservation NRC Docket No. 72-22 is also a better alternative than Yucca mountain but is not as accessible as Pigeon Spur. Pigeon Spur has the most superior methods for storage. Yucca Mountain is very disadvantaged for its location so far from a railroad and disadvantaged where there is simply no reason to be inside of a mountain which is very inaccessible for placing and retrieving and for cooling.

A half a century ago scientists began using atomic energy to make heat, steam, and electricity. In time, 110 U.S. nuclear power plants were built and most of these plants have been operating since. They produce 22% of the nation's electric power, and do this very economically for a cost now approaching that of hydro-electric power. From one gram of uranium fuel, electric energy is produced equivalent to one ton of coal. This is a million to one benefit. Still however, less than five percent (5%) of the fuel rod fuel is used. Eventually the nuclear fuel contaminates itself such that it is no longer an efficiently functioning heat source. At this point the nuclear fuel is called spent, hence spent nuclear fuel (SNF). After use in a reactor, SNF is first put into water which absorbs its heat from the deterioration of the short lived isotopes. After five years in pool storage, the SNF heat production is low enough that rods can be stored and cooled in ambient air. However, because of the industry's lack of dry storage, the average time our nation's SNF is in water storage is now fifteen years.

When the federal government first licensed use of uranium to make electric power, the federal government put itself under contractual obligation to take possession of SNF. A so-called

permanent repository is being built at Yucca Mountain in Nevada. Fees in the amount of one mill per kWh are paid to the federal government by the generating nuclear utilities for taking care of the SNF issue. Today this amounts to around three million dollars per day or a billion dollars per year. For some time now this money has just been going into the Treasury's general fund.

Three reprocessing facilities have been built, two of them operated for a time. One plant never operated when reprocessing was halted by Presidents Ford and Carter in an attempt, in part, to try to prevent nuclear weapons proliferation. When President Reagan was in office, he proclaimed that reprocessing could resume, but U.S. power companies have been reluctant to remake the capital investment again for another reprocessing facility. In the U.S. new uranium has also been considered to be so abundant and cheap that the utilities have been content to use new uranium for fuel rather than reprocessing used SNF material. The U.S. has not restarted reprocessing SNF for its unused energy value. In contrast, most other countries are reprocessing their SNF. For many years now, France, England and Sweden have been reprocessing their SNF. Japan and Russia have recently started reprocessing. India and Australia are building reprocessing facilities. Reprocessing technologies were first developed at INEL in Idaho.

Uranium U238 and even Pu239 plutonium are relatively low sources of radiation. They can even be hand held without harm. But the high energy isotopes in SNF make it different and potentially harmful. For this reason SNF is highly shielded from human exposure. With reprocessing, the remaining isotopes from the SNF will need only around 300 years of secure storage from public exposure. The removed uranium and plutonium are converted to an oxide form which is not fissionable as a bomb. This oxide blend is then put with new fuel to make "mixed oxide" (MOX) fuel for reuse in nuclear reactors. By this procedure, plutonium removed from weapons is also made into MOX fuel and disposed of with significant advantage as a power source in a nuclear power reactor.

Peterson's nuclear work began with a University of Utah reactor in the late 1950s. He was involved in the FAST storage program and was a manufacturer of components for nuclear power plants. A decade ago he began working with Nuclear Negotiator David Leroy; following him, Negotiator Richard Stallings. Peterson with the Southern Pacific Railroad eventually put forth a proposal for temporary storage of spent nuclear fuel (SNF) at the Pigeon railroad spur 12 miles east of the Utah-Nevada border and 45 miles south of the Utah-Idaho border in Box Elder County, Utah. The "Pigeon Spur Fuel Storage Facility" (PSFSF) is ideally located in a virtually unpopulated, central area of the western states. In early 1998 the Box Elder Fuel Storage Alternative or the Pigeon Spur project was assigned by the Nuclear Regulatory Commission to be NRC Docket No. 72-23.

The Pigeon Spur Fuel Storage Facility (PSFSF) technology uses the most proven, reliable and basic railroad transport to the site and in the storage field. A system of parallel railroad tracks is serviced in the storage field with a gantry crane. A transfer table is used to access a chosen storage row. A pair of transfer tables moves the gantry crane from one set of tracks to another. Transfer of canisters from a transport cask to a storage cask is done in a transfer building between the storage field and the servicing railroad. The Pigeon Spur is an existing RR spur off the transcontinental main line section of the Southern Pacific Railroad.

Canisters containing SNF are sealed and pressurized with inert gas. The canisters of SNF are shipped in steel shipping casks and then stored in concrete storage casks. Cross country SNF can be shipped in dedicated trains, having the only cargo being SNF. In front of the SNF shipping car[s] is a buffer car, behind is another buffer car, a locomotive in front, a caboose in the rear, then the train is limited to 30 miles per hour. Over 1,500 crash tests have been conducted on various configurations to develop the cask and cannister configuration used. Over 8,000 train shipments have already been made. No accident involving SNF has released radioactive material to harm the environment or any person.

The proposal for the PSFSF was at first to have SNF in multipurpose storage and shipping canisters which would be lifted from delivery RR-cars with a gantry crane and set four units together onto a 30 foot square by 3 feet thick concrete pad. Now, PSFSF is offering a new proposed alternative having the storage canisters lowered into below ground concrete pipe cask systems which are protected with layers of six feet of concrete above and earth and concrete on the sides. This protects in the event of earthquakes, military plane accidents, or any other form of potential assault. While lifting the canisters in and out of shipping and storage casks, the long lifts are protected from fall damage by a proprietary system of solid cushioning material (like bean bag material) which is pumped in or out and kept under hoisted units within 18 inches. A simple system of underground concrete air ducts brings in outside air which rises over the surface of the canisters to remove the heat from nuclear decay and keep the canister cool. Convection air temperature is monitored daily Cask structural conditions and surface radiation are measured monthly. The canister inert gas pressure is measured twice a year. All of this is done by remote operation so that there is potentially no radiation exposure to site operators.

The storage field for 4,000 casks is 1,200 feet square, 36 acres. The field is encircled with a 20' high earthen berm which hides the field from view, gives redundant radiation protection, and protects against hostile assault relative to the extended area encircling the site.

Our NRC license application was submitted on October 19, 1998. We submitted twenty two (22) copies of our four volume license application plus reference materials volumes. Prior to this, in December of 1997 we applied to the State of Utah according to Utah's law requirement, for a facility for storage of SNF. We likewise applied to Utah as required for a facility to reprocess SNF. With both temporary storage and reprocessing of SNF, we offer a complete solution to the nation's SNF disposition requirement. Since our 1997 application Utah has refused to respond to our written request. Utah's first responsibility must be to recognize that primacy in the SNF matter belongs to the federal government. The federal government has never relinquished an right to any state to license, regulate, or control storage or further processing of SNF.

The nuclear waste is optimally disposed. Critics of the idea of storing SNF at either the Goshute reservation or at Pigeon Spur, the only two U.S. sites which have applied for a license. Critics have complained about a plan to store material they have been told will remain lethally radioactive for 10,000 years. The little known good news is that science can reprocess SNF in such a way that the true wastes of fission products are melted into glass (vitrified) and become harmless in less than 300 years, while the remainder is put into new fuel rods to be completely burned for clean energy. The key to this great increase in safety is to transfer all the actinides (uranium, plutonium, and heavier elements) into new fuel rods, to be used for energy. Without

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any actinides in the waste, no significant waste isotope has a long half life.

Solving our nuclear waste problem in this manner has several big advantages: (1) it greatly reduces the waste storage problem, as mentioned, (2) it recovers the 95 percent unused uranium in SNF to provide future energy, (3) it provides a method for using bomb grade plutonium and U235 uranium for clean energy, thus eliminating old weapons stockpiles, (4) it provides a way to use up stockpiles of U235-depleted uranium (mostly U238) left over from weapons production, (5) it allows for eventual discontinuance of coal- and oil-fired power plants so the U.S. can meet the greenhouse gas emission limits set in the Kyoto conference, and (6) it extends our U.S. nuclear energy supply to last thousands of years.

The documentation of our NRC license application is complete. It needs to be processed according to the NRC schedule. Both PFS and PSFSF NRC applicants are in litigation with Utah over its failure to make a finding of federal primacy and issues of the constitutionality of legislation made by Utah, which is intended to interfere with the development of SNF storage and reprocessing.

In the federal court, we are now justifiably asking for an allowance to proceed with NRC licensing according to the rules of the Nuclear Regulatory Commission and do the building and operation of SNF storage and reprocessing facilities. The PSFSF issues are now before the Tenth Circuit Court in Denver, Colorado, in Peterson v Utah, Tenth Circuit No. 01-4087, Tel 303-844-3157, U.S. District Court Case No. 2:01CV00170. PFS v Utah is U.S. District Court Case No. 2:01CV270. You are welcome to intervene into these cases and inter-plead for your interests in this matter. The two matters are now being heard.

Reprocessing combined with temporary subsurface storage provides a complete and economical solution to the problem of spent nuclear fuel, so there is no need to hold up the expansion of nuclear energy, with its many benefits to our air quality and our global climate. We should go forward now with nuclear power.

Sincerely yours,

William D. (Bill) Peterson, M.S., P.E.
P&A Engineers
Pigeon Spur Fuel Storage Facility
NRC Docket No. 72-23

Note SNF is not "waste" but being 95% U238, SNF is "potential nuclear fuel". Peterson with Pigeon Spur is championing the reprocessing of SNF.

Ref: See over 100 documents on web site: http://www.pigeonspur.com
See U.S. Patents Patent Serial No. 5448604 *Cask Transport, Storage, Monitoring, and Retrieval System* issued September 5th, 1995. and U.S. Patent No. Serial No. 5862195 *Canister, Transport, Storage, Monitoring, and Retrieval System*, issued January 19, 1999.

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ANNOUNCEMENT OF EXTENSION OF PUBLIC COMMENT PERIOD

SUPPLEMENT TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS) FOR YUCCA MOUNTAIN

On May 4, 2001, the U.S. Department of Energy (DOE) published a Notice of Availability (66 FR 22540) of its Supplement to the Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (Draft EIS) (DOE/EIS-0250D-S) and announced a 45-day public comment period ending June 25, 2001. Based on input from the public, DOE is now announcing an extension of the comment period to July 6, 2001.

The public is invited to provide comments on the Supplement to the Draft EIS during the comment period that ends on July 6, 2001. DOE will consider comments received during the comment period in preparation of the Final EIS. Comments received after July 6, 2001 will be considered to the extent practicable.

Written comments and requests for further information on the Supplement to the Draft EIS and requests for copies of the document and included CD-ROM should be directed to:

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U.S. Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
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Telephone 1-800-967-3477
Facsimile 1-800-967-0739

Written comments via facsimiles should include the following identifier: "Yucca Mountain Supplement to the Draft EIS." Written comments on or requests for copies of the document may also be submitted over the internet via the Yucca Mountain Project website at http://www.ymp.gov, under the listing "Environmental Impact Statement."

Sincerely,

for J. Russell Dyer
Project Manager

YMP:5

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